

Project No: TM-2506000042P
Report No.: TMWK2506002192KR FCC ID: 2AQ68T99H55330

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RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C

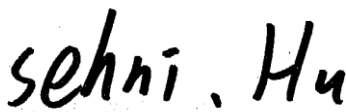
Test Standard	FCC Part 15.247
Product name	IVI_ECU_US
Brand Name	Cloud Network Technology Singapore Pte. Ltd.
Model No.	T99H553.30
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10-2020 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc.(Wugu Laboratory)

Approved by:



Sehni Hu
Supervisor

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	September 17, 2025	Initial Issue	ALL	Peggy Tsai
01	October 3, 2025	See the following Note Rev. (01)	P.1	Peggy Tsai

Rev. (01)

1. Modify FCC ID.



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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	HON LIN Technology Co., Ltd. 11F., NO.32, JIHU RD., NEIHU DIST., TAIPEI CITY 11492, TAIWAN (R.O.C.)
Manufacturer	Cloud Network Technology Singapore Pte. Ltd. 54 Genting Lane #03-05 Ruby Land Complex Singapore, 349562 Singapore
Equipment	IVI_ECU_US
Model No.	T99H553.30
Model Discrepancy	N/A
Trade Name	Cloud Network Technology Singapore Pte. Ltd.
Received Date	June 4, 2025
Date of Test	August 14 ~ 26, 2025
Power Operation	Powered from Power Supply (DC 12V)
HW Version	0.0.6
FW Version	r0.33t1 + m0.16

Remark:

1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.



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1.2 EUT CHANNEL INFORMATION

Frequency Range	802.11b/g/n HT 20/ac VHT: 2412MHz ~ 2462MHz 802.11n HT 40/ac VHT40: 2422MHz ~ 2452MHz
Modulation Type	1. IEEE 802.11b mode: CCK 2. IEEE 802.11g mode: OFDM 3. IEEE 802.11n HT 20 MHz mode : OFDM 4. IEEE 802.11n HT 40 MHz mode : OFDM 5. IEEE 802.11ac VHT 20 MHz mode : OFDM 6. IEEE 802.11ac VHT 40 MHz mode : OFDM
Number of channel	1. IEEE 802.11b mode: 11 Channels 2. IEEE 802.11g mode: 11 Channels 3. IEEE 802.11n HT 20 MHz mode : 11 Channels 4. IEEE 802.11n HT 40 MHz mode : 7 Channels 5. IEEE 802.11ac VHT 20 MHz mode : 11 Channels 6. IEEE 802.11ac VHT 40 MHz mode : 7 Channels

Remark:

Refer as ANSI C63.10-2020 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☒ PIFA ☐ PCB ☐ Dipole ☐ Coils
Antenna Brand / Model	Antenna 1: INPAQ / WA-M-LB-02-297-B Antenna 2: INPAQ / WA-M-LB-02-307-B
Antenna Connector	Fakra I Code

Notes:

1. The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203.

2. Antenna Directional Gain:

For CDD Mode: Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)ii)

Directional Gain = GANT + Array Gain, where Array Gain is as follows:

For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

GANT is set equal to the gain of the antenna having the highest gain.

For PSD measurements, the directional gain calculation.

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k/20}$ if the k th antenna is being fed by spatial stream j , or zero if it is not;
 G_k is the gain in dBi of the k th antenna.

As minimum NSS=1 is supported by EUT, the formula can be simplified as:

Directional gain = $10 \cdot \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$

dBi Where $G_1, G_2, \dots, G_N$ denote single antenna gain.

The directional gain "DG" is calculated as following table.

Frequency	Antenna 1 Gain	Antenna 2 Gain	DG	DG	Power	PSD
			for	for	Limit	Limit
			Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dBi)	(dBi)
2.4GHz	3.18	3.01	3.18	6.11	0.00	0.11

Calculation example:

If a device has two antenna, GANT1= 3.18dBi ; GANT2=3.01dBi

Directional gain of power measurement = $\max(3.18, 3.01) + 0 = 3.18$ dBi

Directional gain of PSD derived from formula which is

$10 \times \log \{ \{ [10^{(3.18 \text{ dBi} / 20)} + 10^{(3.01 \text{ dBi} / 20)}]^2 \} / 2 \} = 6.11$ dBi

Power and PSD limit reduction = Composite gain – 6dBi, (min = 0)



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1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 2.21 dB
Channel Bandwidth	+/- 2.79 dB
RF output power (Power Meter + Power sensor)	+/- 0.24 dB
Power Spectral density	+/- 2.74 dB
Conducted Bandedge	+/- 2.74 dB
Conducted Spurious Emission	+/- 2.74 dB
Radiated Emission_9kHz-30MHz	+/- 3.492 dB
Radiated Emission_30MHz-200MHz	+/- 3.62 dB
Radiated Emission_200MHz-1GHz	+/- 3.899 dB
Radiated Emission_1GHz-6GHz	+/- 5.063 dB
Radiated Emission_6GHz-18GHz	+/- 5.122 dB
Radiated Emission_18GHz-26GHz	+/- 3.032 dB
Radiated Emission_26GHz-40GHz	+/- 3.271 dB

Remark:

- 1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	-	Not applicable, because EUT not connect to AC Main Source direct.
Radiation	Ben Yang, Tony Chao	-
RF Conducted	Jerry Chang	-

Remark: The lab has been recognized as the FCC accredited lab. under the KDB 974614 D01 and is listed in the FCC pubic Access Link (PAL) database, FCC Registration No. :444940, the FCC Designation No.:TW1309



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1.6 INSTRUMENT CALIBRATION

Conducted FCC/IC/NCC (All)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Cable	Woken	WC12	SS01	2025-06-26	2026-06-25
Cable	Woken	WC12	SS02	2025-06-26	2026-06-25
PXA Signal Analyzer	Keysight	N9030B	MY62291089	2024-10-04	2025-10-03
Power Sensor	Anritsu	MA2411B	1911387	2024-08-30	2025-08-29
Power Sensor	Anritsu	MA2411B	1911386	2025-07-07	2026-07-06
Power Meter	Anritsu	ML2496A	2136002	2025-07-07	2026-07-06
DC Blocks	Marvelous Microwave	MVE6411	MVE-001	2025-08-06	2026-08-05
Attenuator	Marvelous Microwave Inc	MVE2213-10	08	2024-11-07	2025-11-06
DC Power Source	GWINSTEK	GPC-3030D	8070184	2024-09-20	2025-09-19
Software	Radio Test Software Ver. 21				

- Remark:**
- 1. Each piece of equipment is scheduled for calibration once a year.
 - 2. N.C.R. = No Calibration Required.



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966A_Radiated					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Signal Analyzer	KEYSIGHT	N9010A	MY52220817	2025-03-05	2026-03-04
Active Loop Antenna	COM-POWER	AL-130	121051	2025-02-18	2026-02-17
Thermo-Hygro Meter	HTC	HTC-1	HTC-D06	2025-05-26	2026-05-25
Bi-Log Antenna	Sunol Sciences	JB3	A030105&532	2025-06-26	2026-06-25
Preamplifier	EMEC	EM330	060609	2025-02-20	2026-02-19
Cable	Huber+Suhner	104PEA	20995+21000+182330	2025-08-06	2026-08-05
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2024-12-20	2025-12-19
Preamplifier	HP	8449B	3008A00965	2024-12-18	2025-12-17
Cable	EMCI	EMC101G	221012+230205+250412	2025-04-24	2026-04-23
Attenuator	Mini-Circuits	BW-S9W5	BWS9W5-09-966A-01	2025-02-06	2026-02-05
High Pass Filters	Titan Microwave	T04H30001800070S01	22011402-4	2025-06-03	2026-06-02
Pre-Amplifier	EMCI	EMC184045SE	980860	2024-12-02	2025-12-01
Horn Antenna	SCHWARZBEC K	BBHA9170	1047	2024-12-06	2025-12-05
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Software	e3 V9-210616c				

Remark:

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.



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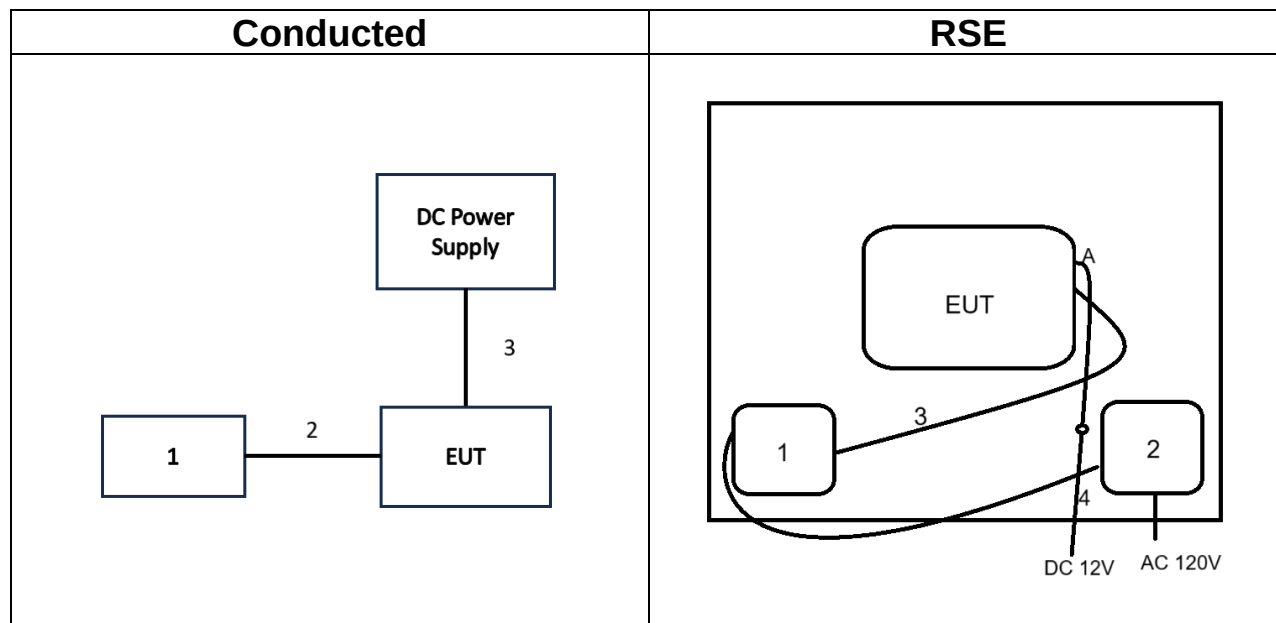
1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
	N/A					

Support Equipment (Conducted)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(B)	Lenovo	T470	N/A	N/A
2	Type C Cable	Xiaomi	SJX10ZM	N/A	N/A
3	DC Power Cable	MISUMI	MCR3S-RE	N/A	N/A

Support Equipment (RSE)					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A
2	Adapter	Lenovo	ADLX45DLC3A	N/A	N/A
3	Type C Cable	Xiaomi	SJX10ZM	N/A	N/A
4	DC Power Cable	MISUMI	MCR3S-RE	N/A	N/A
A	Power Cable	N/A	N/A	N/A	N/A

1.8 TEST SET UP DIAGRAM



1.9 TEST PROGRAM

The EUT connection corresponds to the surrounding fixture control board.
This EUT uses "adb" software and setup command to set the frequency, modulation, and power to allow the sample to continuously transmit.

1.10 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10-2020, FCC Part 2, FCC Part 15.247, KDB 558074.



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2. TEST SUMMARY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	N/A
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Band Edge	Pass
15.247(d)	4.5	Conducted Emission	Pass
15.247(d) 15.205, 15.209	4.6	Radiation Band Edge	Pass
15.247(d) 15.205, 15.209	4.6	Radiation Spurious Emission	Pass



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3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	IEEE 802.11b mode :1Mbps IEEE 802.11g mode :6Mbps IEEE 802.11n HT20 mode :MCS0 IEEE 802.11n HT40 mode :MCS0 IEEE 802.11ac VHT20 mode :MCS0 IEEE 802.11ac VHT40 mode :MCS0
Test Channel Frequencies	IEEE 802.11b mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11g mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11n HT20 mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11n HT40 mode : 1. Lowest Channel : 2422MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2452MHz IEEE 802.11ac VHT20 mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11ac VHT40 mode : 1. Lowest Channel : 2422MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2452MHz
Operation Transmitter	IEEE 802.11b mode :1T1R IEEE 802.11g mode :1T1R IEEE 802.11n HT20 mode : 2T2R IEEE 802.11n HT40 mode : 2T2R IEEE 802.11ac VHT20 mode : 2T2R IEEE 802.11ac VHT40 mode : 2T2R

Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.
2. Based on FCC Part 15.31(m), the laboratory conducts a comprehensive evaluation of ch low, ch middle, and ch high. Other additional channels only evaluate the radiated restricted bands of operation and powers.

3.2 THE WORST MODE OF MEASUREMENT

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT power by Power Supply(DC12V)
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☐ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☒ Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by Power Supply(DC12V)
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:

1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Z-Plane) were recorded in this report.
3. Since the modulation and bandwidth of 802.11n mode are similar to those of 802.11ac, manufacturers control the power of 802.11ac mode to be at the same or lower level as 802.11n mode, and represent the worst-case level in the test report.
4. This device supports both SISO and MIMO modes. Using the same output power level, MIMO mode outputs greater power than SISO mode, making MIMO the worst case. For the output port of SISO Mode, select a larger power as other non-power test items.



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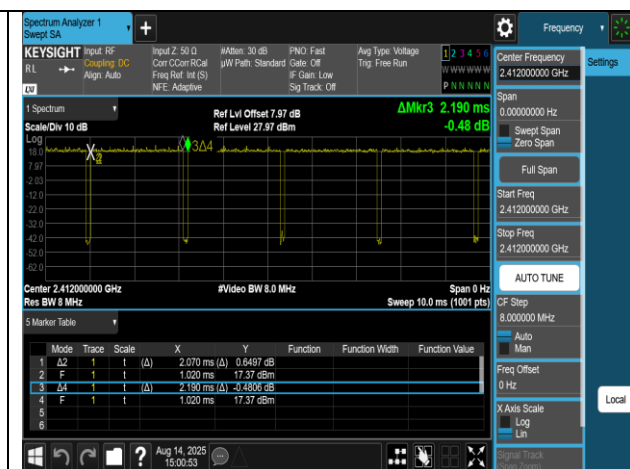
3.3 EUT DUTY CYCLE

Temperature: 21.8 ~ 24.2°C Test date: August 14 ~ 26, 2025
Humidity: 54 ~ 61% RH Tested by: Jerry Chang

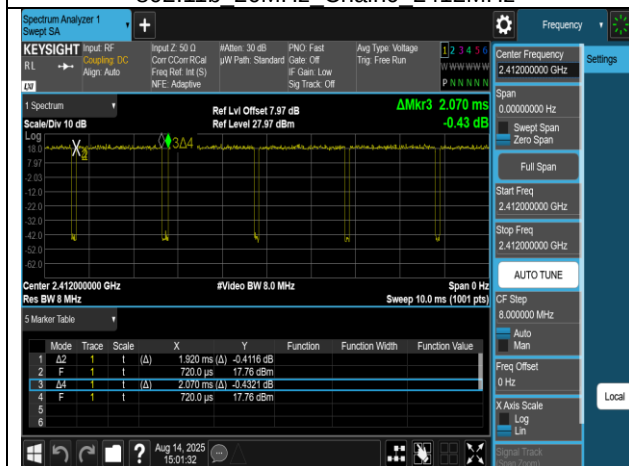
Mode	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11b	99.04	0.04	0.08	0.01
802.11g	94.52	0.24	0.48	1.00
802.11n_20	92.75	0.33	0.52	1.00
802.11n_40	90.48	0.43	1.05	2.00
802.11ac_20	94.63	0.24	0.52	1.00
802.11ac_40	87.96	0.56	1.05	2.00



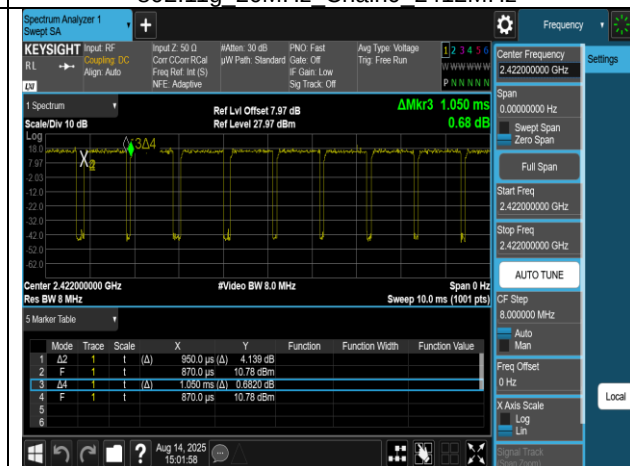
802.11b 20MHz Chain0 2412MHz



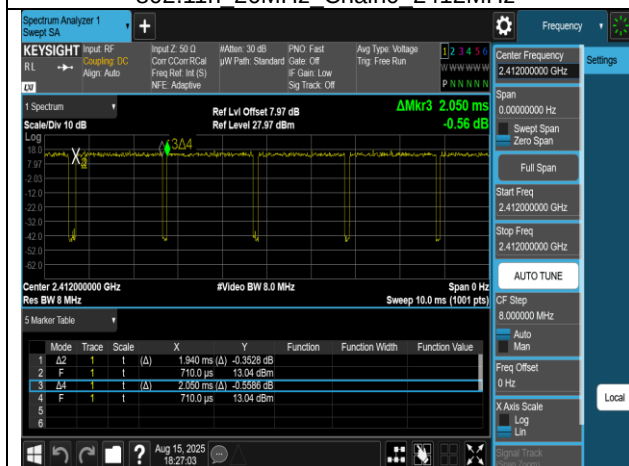
802.11g 20MHz Chain0 2412MHz



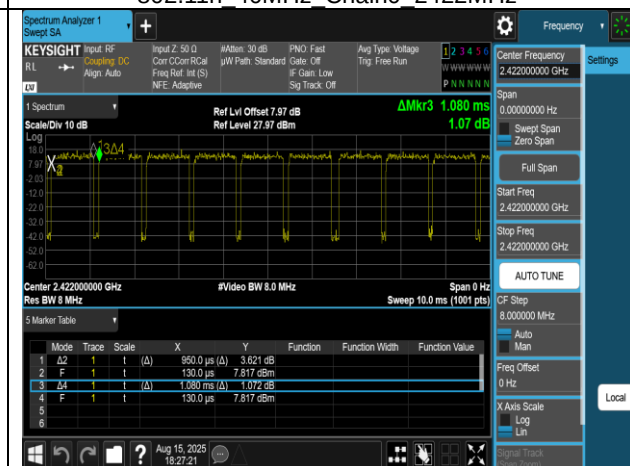
802.11n 20MHz Chain0 2412MHz



802.11n 40MHz Chain0 2422MHz



802.11ac 20MHz Chain0 2412MHz



802.11ac 40MHz Chain0 2422MHz

4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a)(2),

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

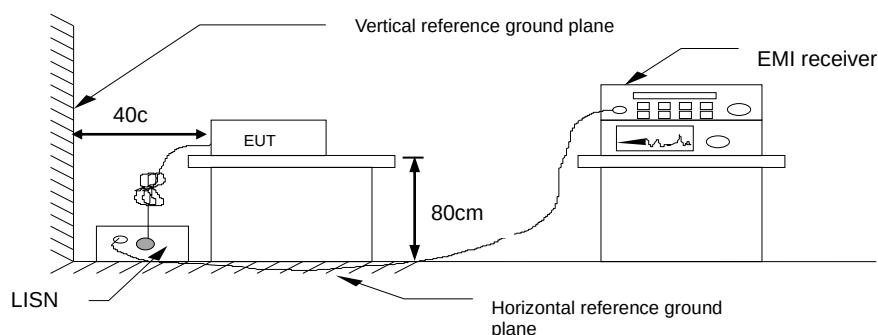
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI C63.10-2020,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup



4.1.4 Test Result

Not applicable, because EUT not connect to AC Main Source direct.



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4.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

4.2.1 Test Limit

According to §15.247(a)(2),

6 dB Bandwidth :

Limit	Shall be at least 500kHz
-------	--------------------------

Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

Test method Refer as KDB 558074 D01 and ANSI C63.10-2020,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup

Refer to section 1.8.



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4.2.4 Test Result

Temperature: 21.8 ~ 24.2°C Test date: August 14 ~ 26, 2025
Humidity: 54 ~ 61% RH Tested by: Jerry Chang

6dB BANDWIDTH

802.11b Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	8091	≥ 500	PASS
2437	8093	≥ 500	PASS
2462	7113	≥ 500	PASS

802.11g Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	15950	≥ 500	PASS
2437	15760	≥ 500	PASS
2462	15320	≥ 500	PASS



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802.11n_HT_20M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16390	≥ 500	PASS
2437	16370	≥ 500	PASS
2462	15160	≥ 500	PASS

802.11n_HT_20M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	15990	≥ 500	PASS
2437	16380	≥ 500	PASS
2462	15110	≥ 500	PASS

802.11n_HT_40M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35130	≥ 500	PASS
2437	35400	≥ 500	PASS
2452	35160	≥ 500	PASS

802.11n_HT_40M Ch1

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35170	≥ 500	PASS
2437	35750	≥ 500	PASS
2452	35160	≥ 500	PASS



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BANDWIDTH 99%

802.11b Ch0

Freq. (MHz)	99% BW (MHz)
2412	13.535
2437	13.282
2462	12.493

802.11g Ch0

Freq. (MHz)	99% BW (MHz)
2412	16.659
2437	16.632
2462	16.284

802.11n_HT20M Ch0

Freq. (MHz)	99% BW (MHz)
2412	17.754
2437	17.789
2462	17.388

802.11n_HT20M Ch1

Freq. (MHz)	99% BW (MHz)
2412	17.614
2437	17.599
2462	17.363

802.11n_HT40M Ch0

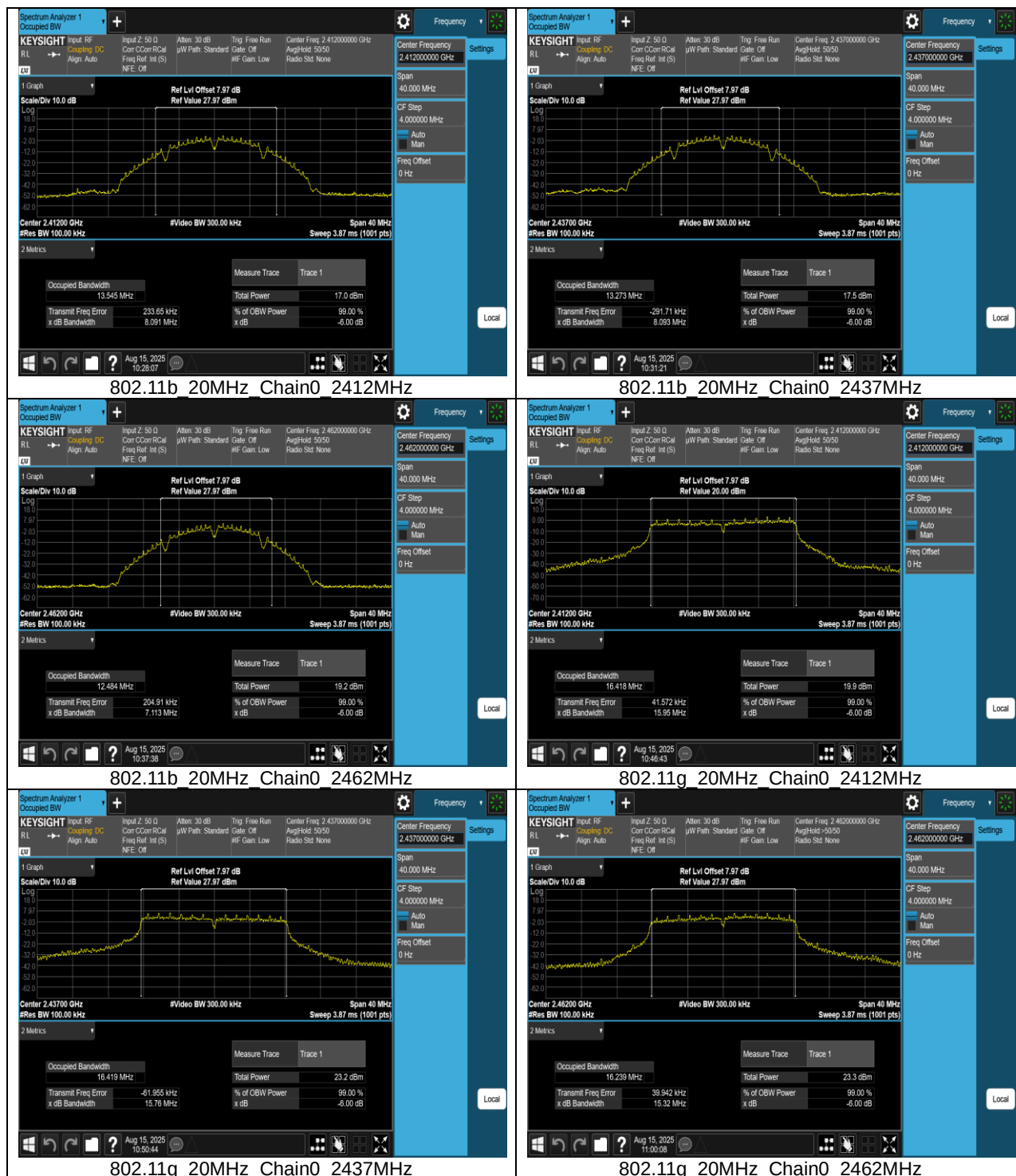
Freq. (MHz)	99% BW (MHz)
2422	36.011
2437	36.417
2452	36.271

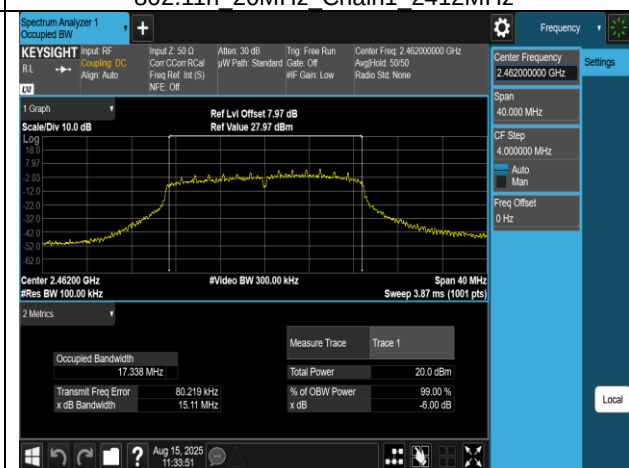
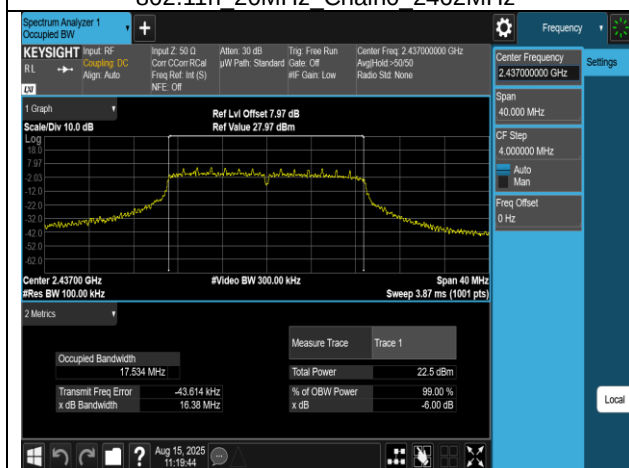
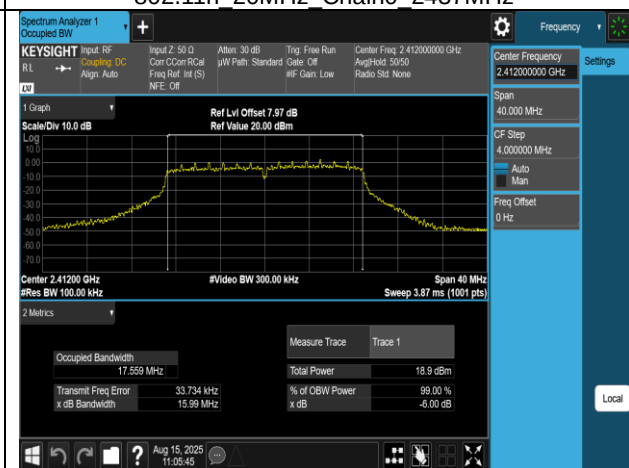
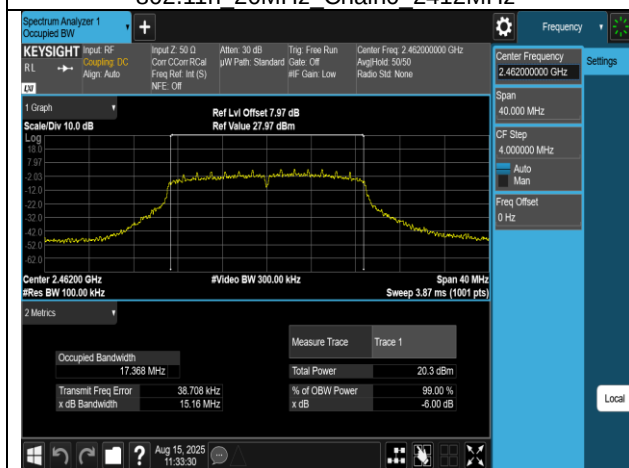
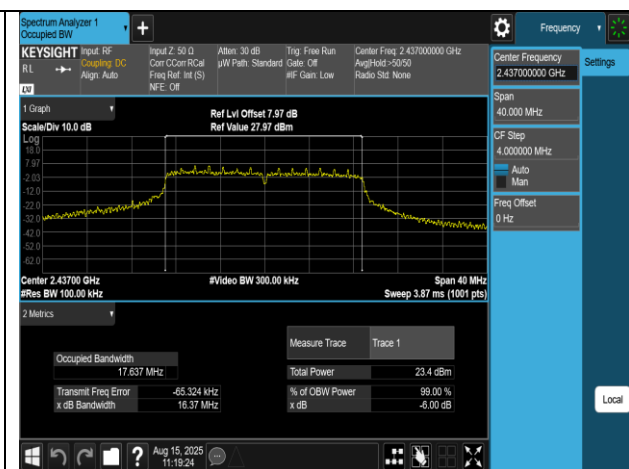
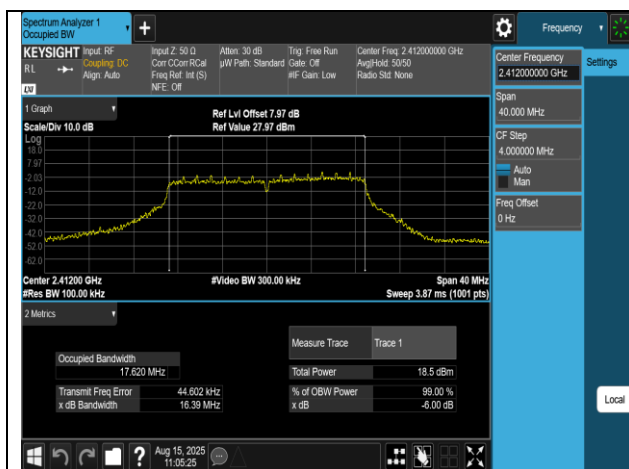
802.11n_HT40M Ch1

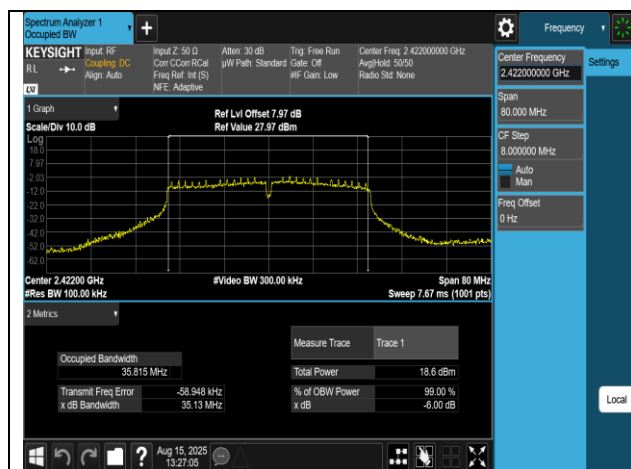
Freq. (MHz)	99% BW (MHz)
2422	36.014
2437	36.224
2452	36.275

Test Data

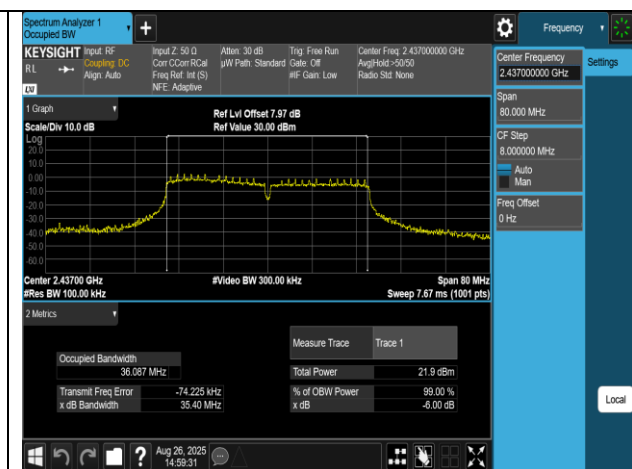
6dB BANDWIDTH



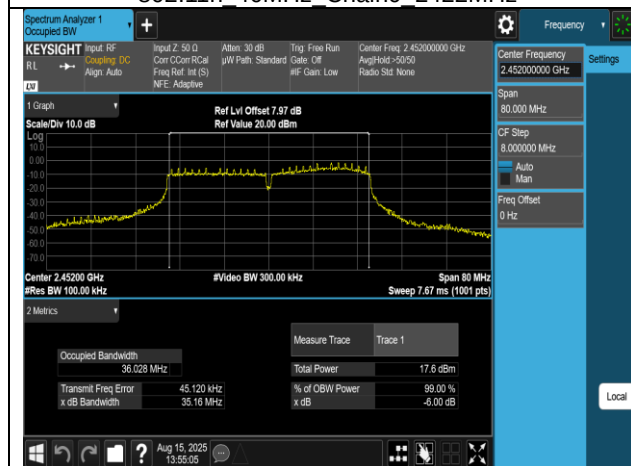




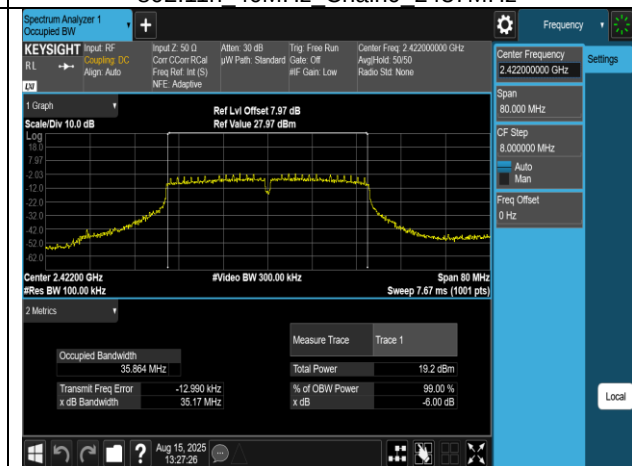
802.11n 40MHz Chain0 2422MHz



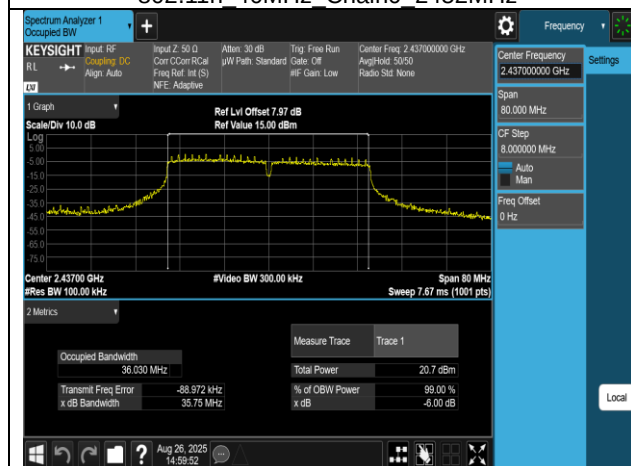
802.11n 40MHz Chain0 2437MHz



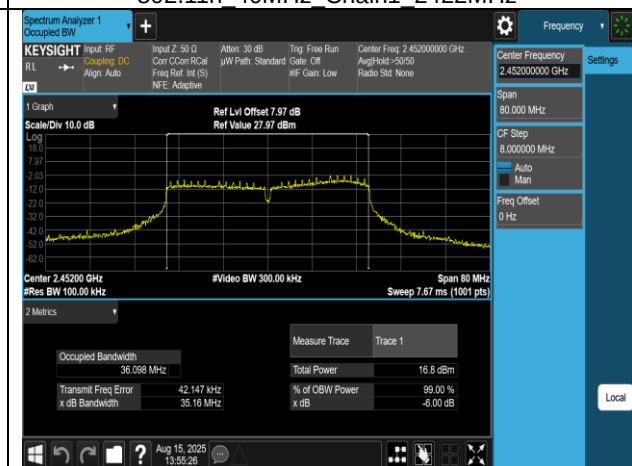
802.11n 40MHz Chain0 2452MHz



802.11n 40MHz Chain1 2422MHz



802.11n 40MHz Chain1 2437MHz



802.11n 40MHz Chain1 2452MHz

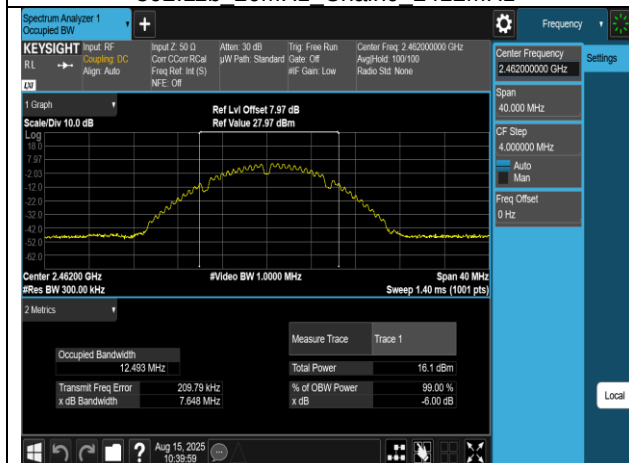
BANDWIDTH 99%



802.11b 20MHz Chain0 2412MHz



802.11b 20MHz Chain0 2437MHz



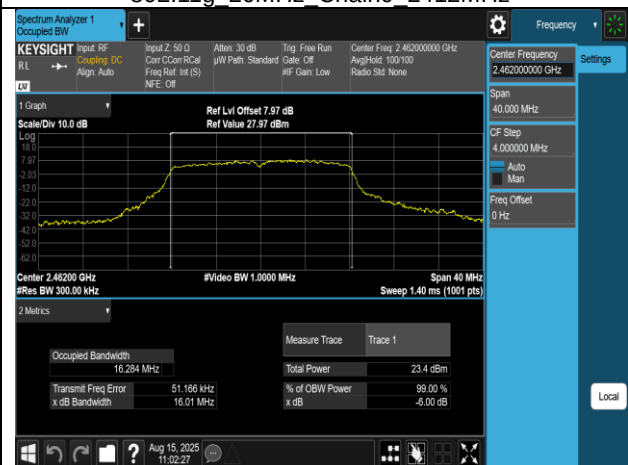
802.11b 20MHz Chain0 2462MHz



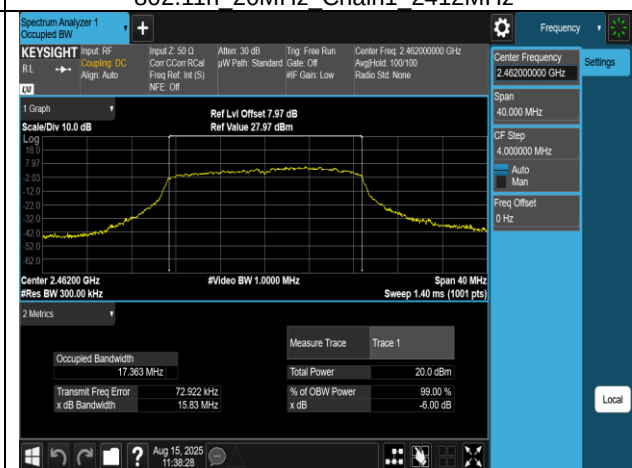
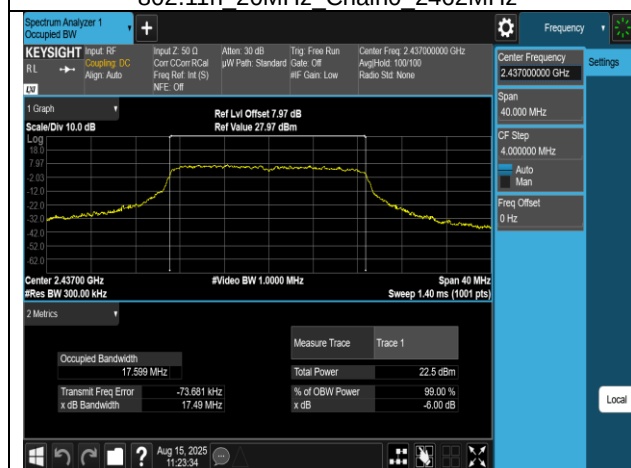
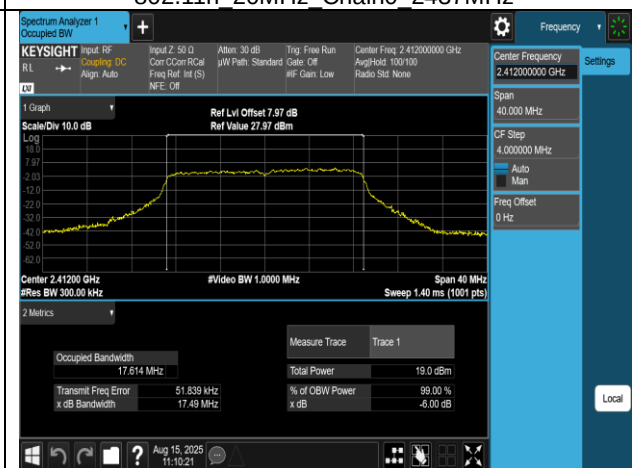
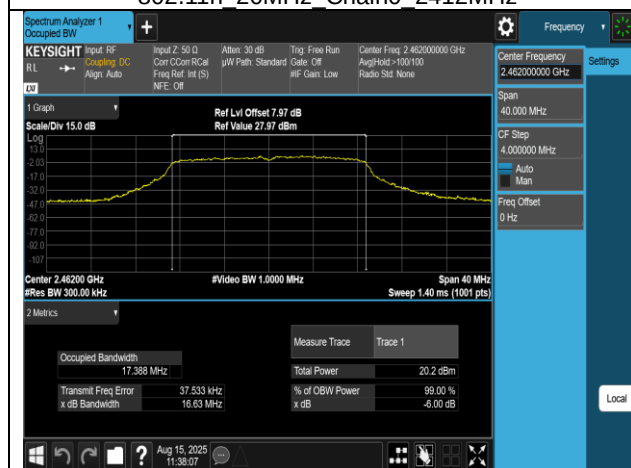
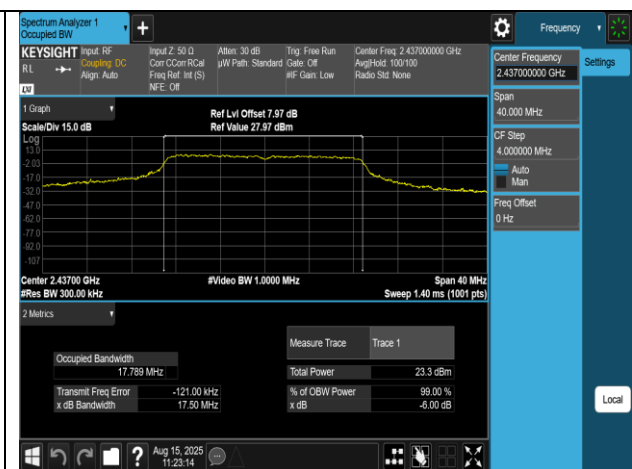
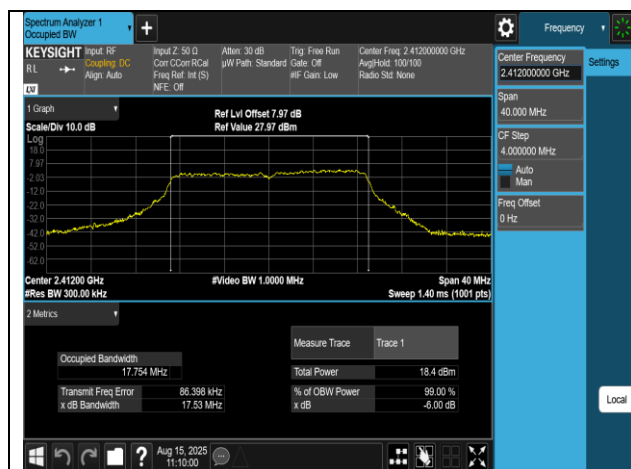
802.11g 20MHz Chain0 2412MHz

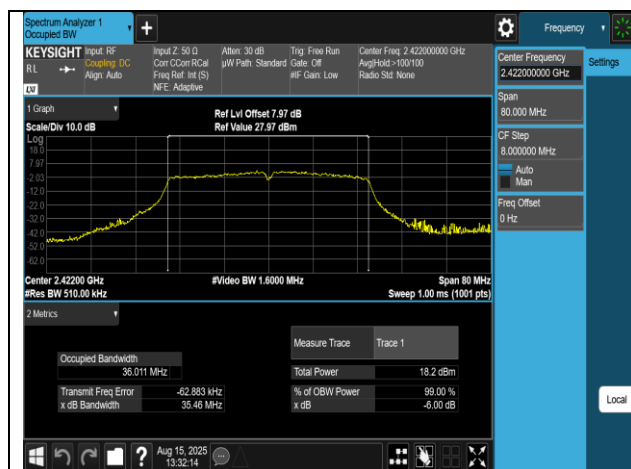


802.11g 20MHz Chain0 2437MHz

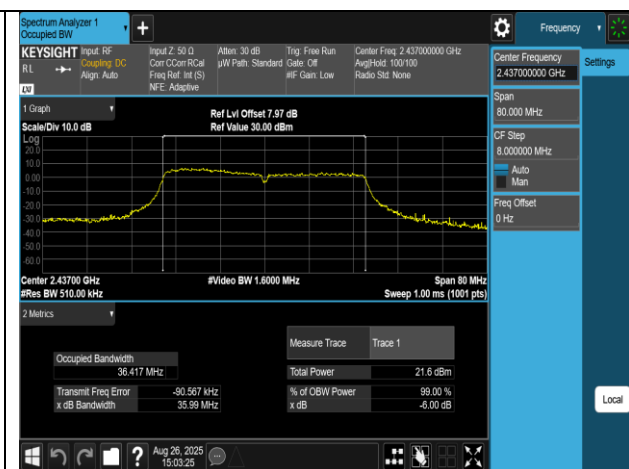


802.11g 20MHz Chain0 2462MHz

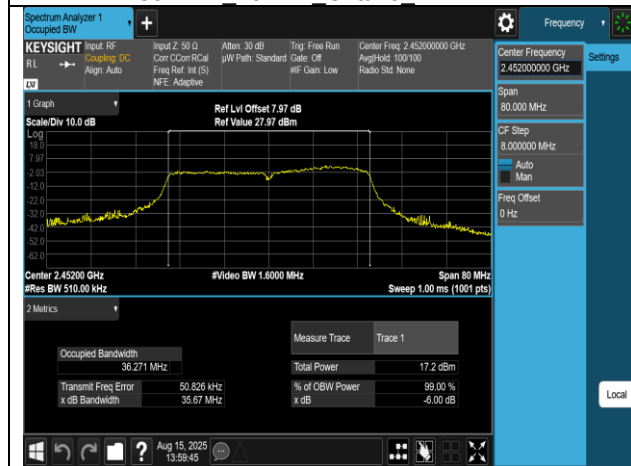




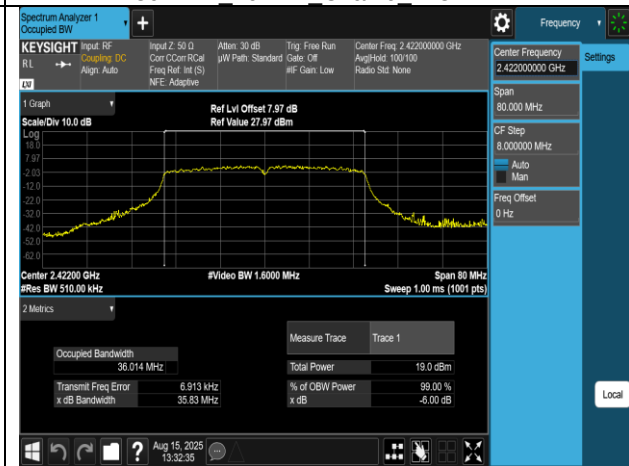
802.11n 40MHz Chain0 2422MHz



802.11n 40MHz Chain0 2437MHz



802.11n 40MHz Chain0 2452MHz



802.11n 40MHz Chain1 2422MHz



802.11n 40MHz Chain1 2437MHz



802.11n 40MHz Chain1 2452MHz



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4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b),

FCC

Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm) and the e.i.r.p. shall not exceed 4Watt(36 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	☒ Antenna not exceed 6 dBi : 30dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)] ☐ Point-to-point operation :
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Average output power : For reporting purposes only.

4.3.2 Test Procedure

Test method Refer as KDB 558074 D01.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup

Refer to section 1.8.

4.3.4 Test Result

Temperature: 21.8 ~ 24.2°C Test date: August 14 ~ 26, 2025
Humidity: 54 ~ 61% RH Tested by: Jerry Chang

Peak & Average output power :

802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	10.5	18.54	12.68	30.00	PASS
6	2437	1	10.5	20.37	13.09	30.00	PASS
11	2462	1	13.5	31.70	15.01	30.00	PASS
802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	10.5	10.89	10.37	30.00	PASS
6	2437	1	10.5	11.41	10.57	30.00	PASS
11	2462	1	13.5	17.15	12.34	30.00	PASS
802.11b Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	10	19.50	12.90	30.00	PASS
6	2437	1	11	17.86	12.52	30.00	PASS
11	2462	1	13.5	30.06	14.78	30.00	PASS
802.11b Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	10	10.65	10.27	30.00	PASS
6	2437	1	11	10.00	10.00	30.00	PASS
11	2462	1	13.5	16.64	12.21	30.00	PASS



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802.11g Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	13.5	80.17	19.04	30.00	PASS
2	2417	6	16.5	145.21	21.62	30.00	PASS
6	2437	6	16.5	142.56	21.54	30.00	PASS
11	2462	6	16.5	119.67	20.78	30.00	PASS

802.11g Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	13.5	19.34	12.86	30.00	PASS
2	2417	6	16.5	39.76	15.99	30.00	PASS
6	2437	6	16.5	39.49	15.96	30.00	PASS
11	2462	6	16.5	31.44	14.97	30.00	PASS

802.11g Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	12.5	73.79	18.68	30.00	PASS
2	2417	6	16.5	137.40	21.38	30.00	PASS
6	2437	6	16.5	126.77	21.03	30.00	PASS
11	2462	6	16	114.29	20.58	30.00	PASS

802.11g Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	12.5	17.04	12.31	30.00	PASS
2	2417	6	16.5	36.60	15.63	30.00	PASS
6	2437	6	16.5	31.80	15.02	30.00	PASS
11	2462	6	16	29.61	14.71	30.00	PASS

802.11n_HT20M_2TX

CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
1	2412	MCS0	12	17.69	18.15	124.06	20.94	30.00	PASS
2	2417	MCS0	17	22.17	22.22	331.54	25.21	30.00	PASS
6	2437	MCS0	17	21.53	21.24	275.28	24.40	30.00	PASS
10	2457	MCS0	17	21.42	21.34	274.82	24.39	30.00	PASS
11	2462	MCS0	14.5	20.15	19.76	198.14	22.97	30.00	PASS

802.11n_HT20M_2TX

CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
1	2412	MCS0	12	11.44	11.85	29.22	14.66	30.00	PASS
2	2417	MCS0	17	15.78	16.10	78.53	18.95	30.00	PASS
6	2437	MCS0	17	16.17	15.40	76.02	18.81	30.00	PASS
10	2457	MCS0	17	15.09	15.04	64.15	18.07	30.00	PASS
11	2462	MCS0	14.5	13.06	12.85	39.48	15.96	30.00	PASS

802.11n_HT40M_2TX

CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
3	2422	MCS0	12	18.95	19.02	158.32	22.00	30.00	PASS
4	2427	MCS0	11.5	17.83	18.59	132.95	21.24	30.00	PASS
5	2432	MCS0	13.5	20.35	20.29	215.30	23.33	30.00	PASS
6	2437	MCS0	14	20.72	19.28	202.75	23.07	30.00	PASS
7	2442	MCS0	12	18.39	17.87	130.26	21.15	30.00	PASS
8	2447	MCS0	10	15.23	15.58	69.48	18.42	30.00	PASS
9	2452	MCS0	10.5	17.36	17.21	107.05	20.30	30.00	PASS

802.11n_HT40M_2TX

CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
3	2422	MCS0	12	11.19	11.78	28.25	14.51	30.00	PASS
4	2427	MCS0	11.5	11.07	11.67	27.51	14.40	30.00	PASS
5	2432	MCS0	13.5	13.57	13.38	44.57	16.49	30.00	PASS
6	2437	MCS0	14	13.86	12.40	41.74	16.21	30.00	PASS
7	2442	MCS0	12	12.28	11.95	32.61	15.13	30.00	PASS
8	2447	MCS0	10	9.55	9.99	19.01	12.79	30.00	PASS
9	2452	MCS0	10.5	10.14	9.30	18.86	12.76	30.00	PASS

802.11ac_VHT20M_2TX

CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
1	2412	MCS0	12	17.76	18.06	123.68	20.92	30.00	PASS
2	2417	MCS0	17	22.12	22.25	330.81	25.20	30.00	PASS
6	2437	MCS0	17	21.39	21.19	269.24	24.30	30.00	PASS
10	2457	MCS0	17	21.55	21.21	275.02	24.39	30.00	PASS
11	2462	MCS0	14.5	20.07	19.73	195.60	22.91	30.00	PASS

802.11ac_VHT20M_2TX

CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
1	2412	MCS0	12	11.31	11.45	27.48	14.39	30.00	PASS
2	2417	MCS0	17	15.59	15.87	74.86	18.74	30.00	PASS
6	2437	MCS0	17	15.84	15.27	72.02	18.57	30.00	PASS
10	2457	MCS0	17	14.93	14.82	61.45	17.89	30.00	PASS
11	2462	MCS0	14.5	12.95	12.74	38.51	15.86	30.00	PASS

802.11ac_VHT40M_2TX

CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
3	2422	MCS0	12	18.84	18.99	155.81	21.93	30.00	PASS
4	2427	MCS0	11.5	17.77	18.14	125.00	20.97	30.00	PASS
5	2432	MCS0	13.5	19.92	19.97	197.49	22.96	30.00	PASS
6	2437	MCS0	14	20.63	19.22	199.17	22.99	30.00	PASS
7	2442	MCS0	12	18.00	17.66	121.44	20.84	30.00	PASS
8	2447	MCS0	10	15.14	15.30	66.54	18.23	30.00	PASS
9	2452	MCS0	10.5	17.34	17.12	105.72	20.24	30.00	PASS

802.11ac_VHT40M_2TX

CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
3	2422	MCS0	12	11.07	11.61	27.26	14.36	30.00	PASS
4	2427	MCS0	11.5	10.99	11.73	27.44	14.38	30.00	PASS
5	2432	MCS0	13.5	13.56	13.35	44.30	16.46	30.00	PASS
6	2437	MCS0	14	13.81	12.39	41.35	16.17	30.00	PASS
7	2442	MCS0	12	12.34	11.88	32.54	15.12	30.00	PASS
8	2447	MCS0	10	9.58	9.93	18.91	12.77	30.00	PASS
9	2452	MCS0	10.5	10.14	9.27	18.77	12.73	30.00	PASS



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4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.247(e),

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Limit	☐ Antenna not exceed 6 dBi : 8dBm ☒ Antenna with DG greater than 6 dBi : [Limit = 8 – (DG – 6)] ☐ Point-to-point operation :
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4.4.2 Test Procedure

Test method Refer as KDB 558074 D01

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 10kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss were compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup

Refer to section 1.8.



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4.4.4 Test Result

Temperature: 21.8 ~ 24.2°C Test date: August 14 ~ 26, 2025
Humidity: 54 ~ 61% RH Tested by: Jerry Chang

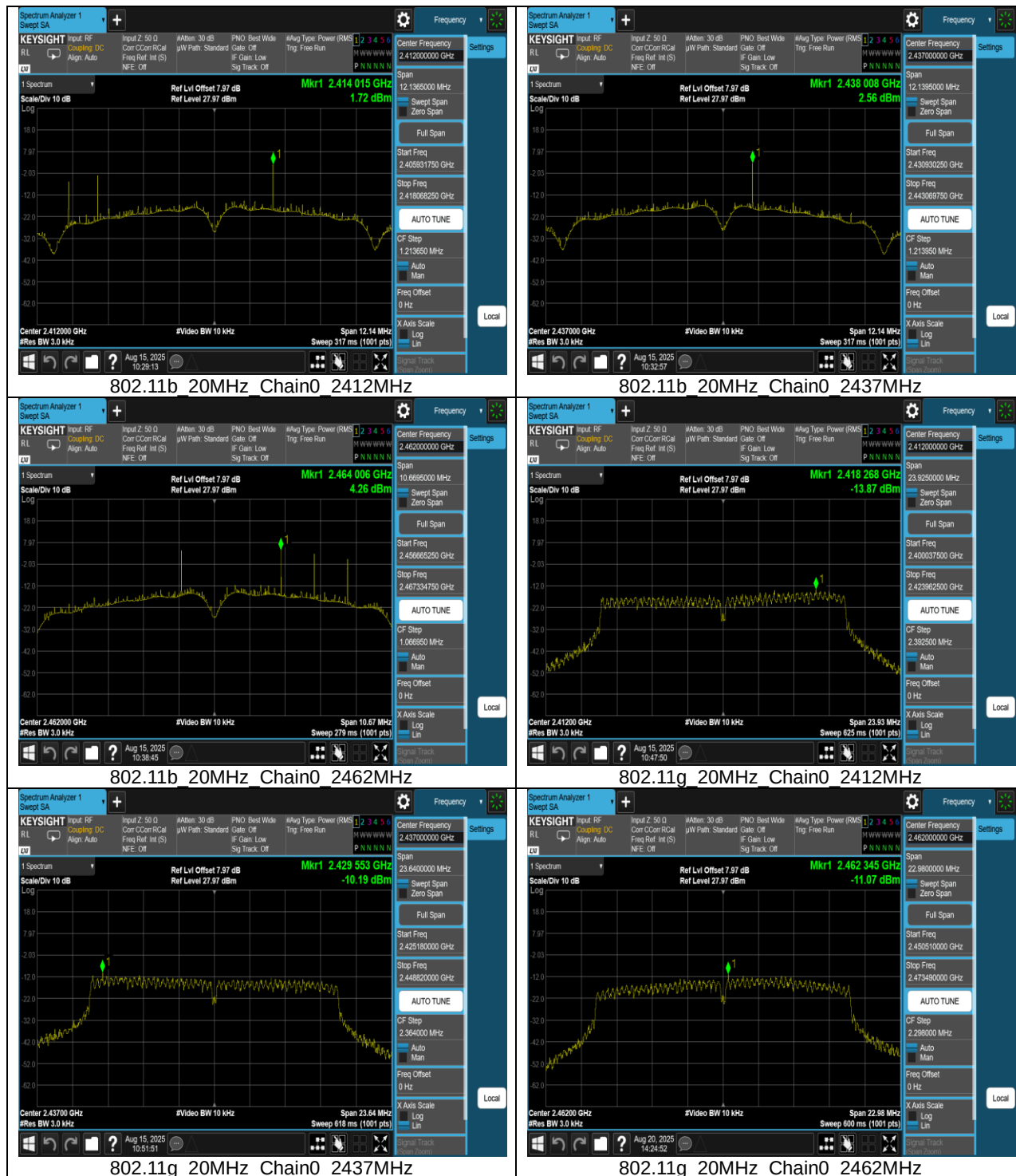
POWER DENSITY 802.11b				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	1.72	1.72	8.00	PASS
2437	2.56	2.56	8.00	PASS
2462	4.26	4.26	8.00	PASS

POWER DENSITY 802.11g				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-13.87	-13.87	8.00	PASS
2437	-10.19	-10.19	8.00	PASS
2462	-11.07	-11.07	8.00	PASS

POWER DENSITY 802.11n HT20					
Freq. (MHz)	Ch0 PSD	Ch1 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-13.58	-15.36	-11.37	7.89	PASS
2437	-11.15	-11.76	-8.43	7.89	PASS
2462	-13.75	-12.45	-10.04	7.89	PASS

POWER DENSITY 802.11n HT40					
Freq. (MHz)	Ch0 PSD	Ch1 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2422	-18.03	-17.57	-14.78	7.89	PASS
2437	-14.33	-14.62	-11.46	7.89	PASS
2452	-18.54	-19.27	-15.88	7.89	PASS

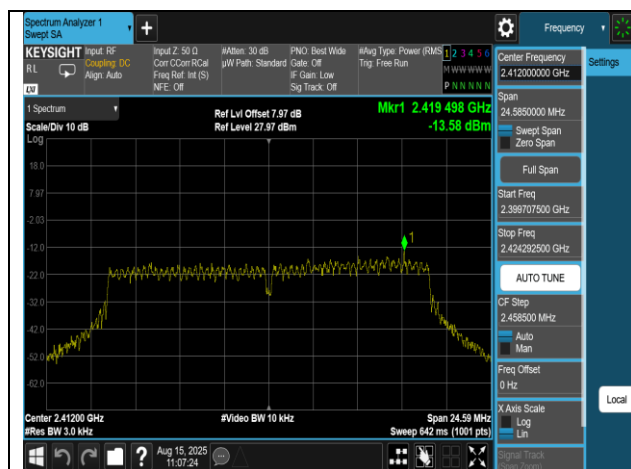
Test Data



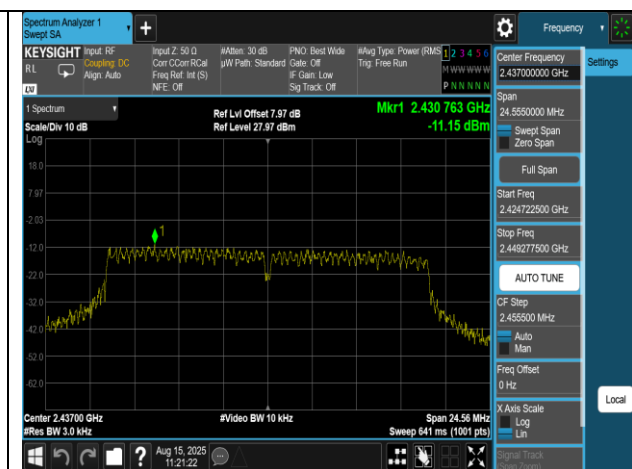


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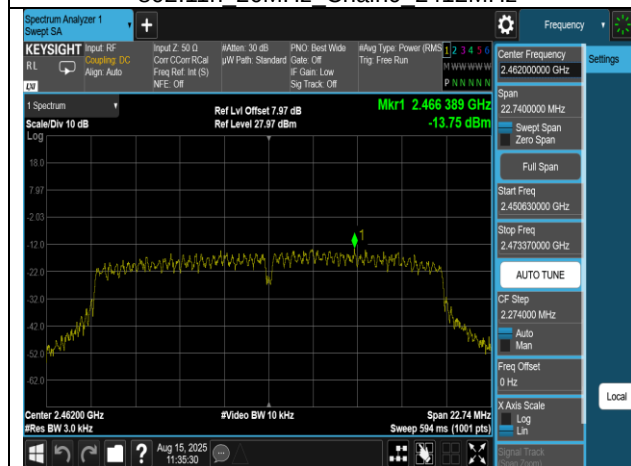
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802.11n 20MHz Chain0 2412MHz



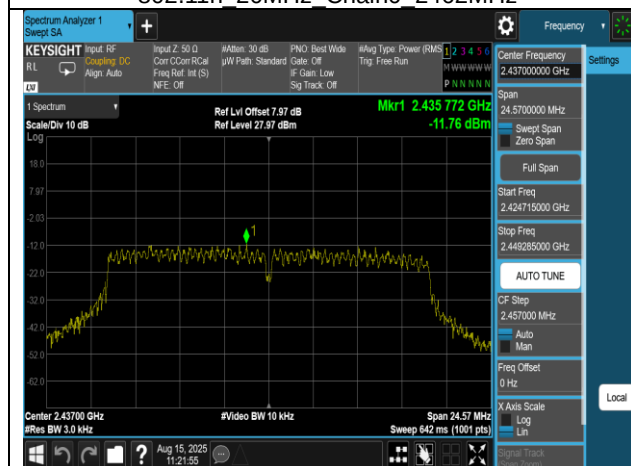
802.11n 20MHz Chain0 2437MHz



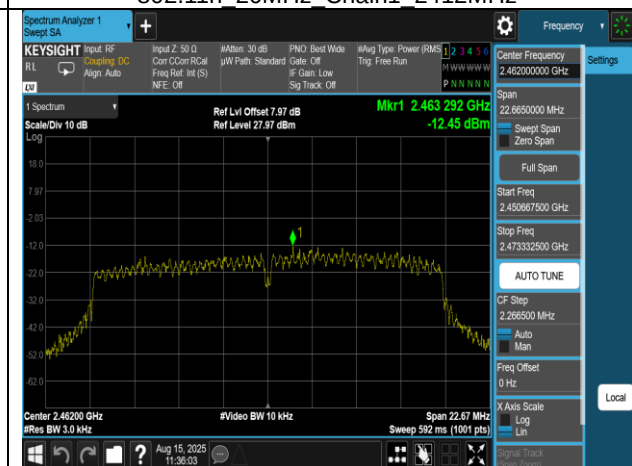
802.11n 20MHz Chain0 2462MHz



802.11n 20MHz Chain1 2412MHz



802.11n 20MHz Chain1 2437MHz

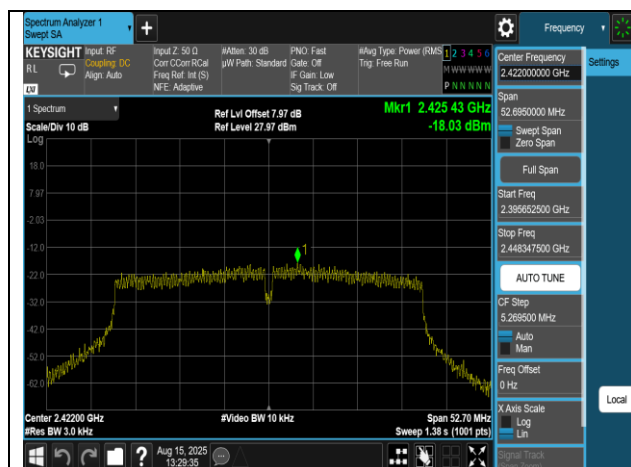


802.11n 20MHz Chain1 2462MHz

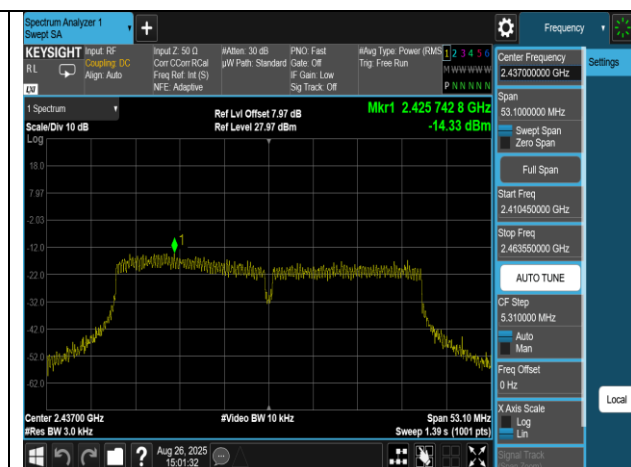


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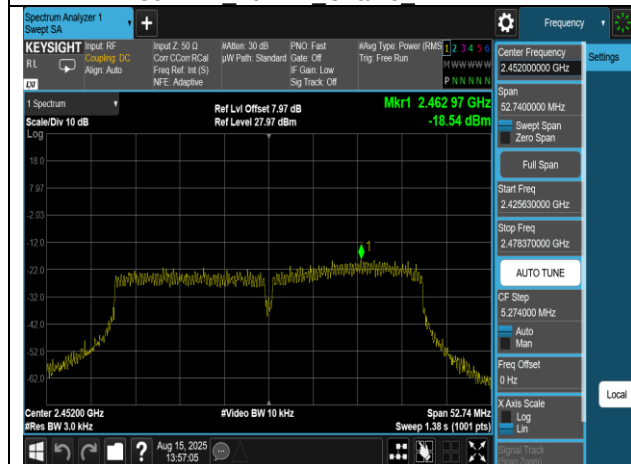
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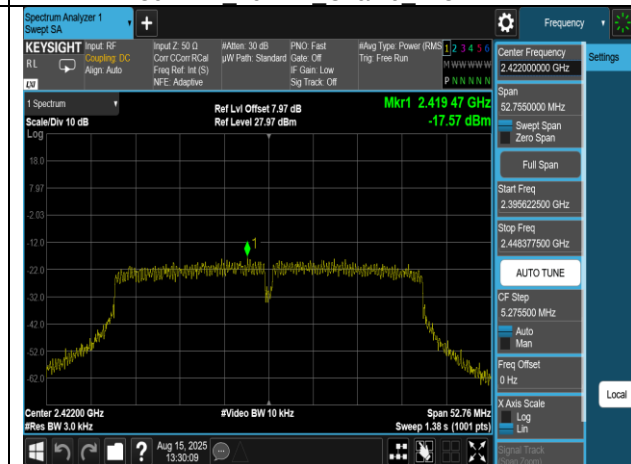
802.11n 40MHz Chain0 2422MHz



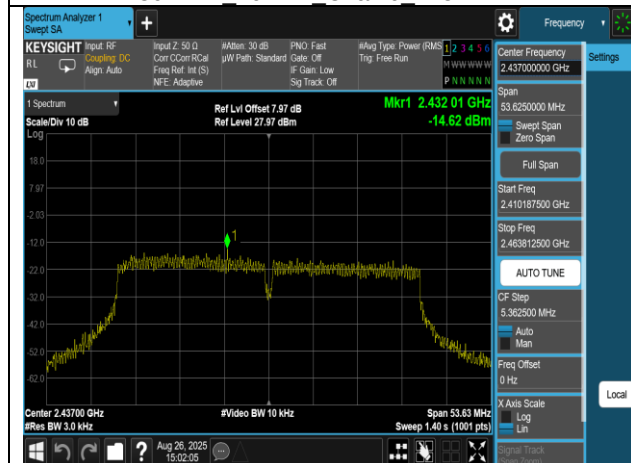
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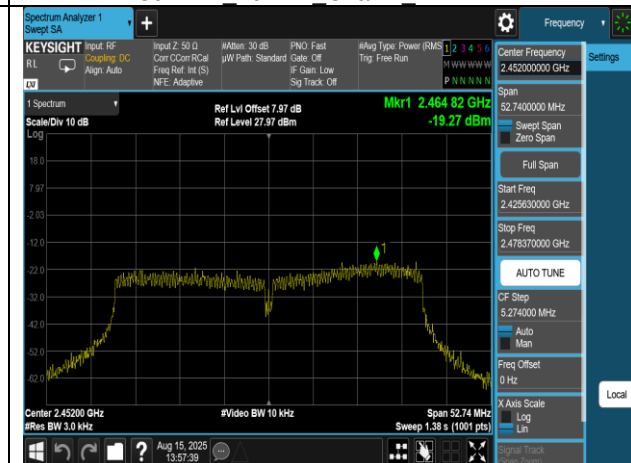
802.11n 40MHz Chain0 2452MHz



802.11n 40MHz Chain1 2422MHz



802.11n 40MHz Chain1 2437MHz



802.11n 40MHz Chain1 2452MHz



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4.5 CONDUCTED BANDEGE AND SPURIOUS EMISSION

4.5.1 Test Limit

According to §15.247(d) and RSS-247 section 5.5,

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

4.5.2 Test Procedure

Test method Refer as KDB 662911 D01, KDB 558074 D01.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.
2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.
3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

4.5.3 Test Setup

Refer to section 1.8.

4.5.4 Test Result

Temperature:	21.8 ~ 24.2°C	Test date:	August 14 ~ 26, 2025
Humidity:	54 ~ 61% RH	Tested by:	Jerry Chang